

ABSTRACT OF THE DISCLOSURE

A computer system provides improved routability for memory modules. Chips  
5 are placed on the back side of the module directly behind the chips on the front side,  
and vias connects destination pins on the front side to the back side. Internal  
assignments are routed to the pins so as to be bilaterally symmetrical. These functions  
can include any of the pins used on the memory chip, including the address bus and  
the command bus. The bit positions of the internal assignments routed to pins  
connected together need not be identical. Where bit positions are coupled together, a  
remap multiplexer is used to perform rerouting of logical information onto different  
physical bus lines. The remap multiplexer may be implemented in the system BIOS, in  
the memory controller, or alternatively on the memory module. Further, the rerouting  
may be accomplished through any combination of hardware or software.